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HISTORICAL FUND
of the
NAVY MEDICAL DEPARTMENT

A committee has been formed with representation from the Medical Corps, Dental Corps, Medical Service Corps, Nurse Corps, and Hospital Corps for the purpose of creating a fund to be used for the collection and maintenance of items of historical interest to the Medical Department. Such items will include, but will not be limited to, portraits, memorials, etc., designed to perpetuate the memory of distinguished members of the Navy Medical Department. These memorials will be displayed in the Bureau of Medicine and Surgery and at the National Naval Medical Center. Medical Department officers, active and inactive, are invited to make small contributions to the fund. It is emphasized that all donations must be on a strictly voluntary basis. Funds received will be deposited in a Washington, D. C. bank to the credit of the Navy Medical Department Historical Fund, and will be expended only as approved by the Committee or its successor and for the objectives stated.

It is anticipated that an historical committee will be organized at each of our medical activities. If you desire to contribute please do so through your local historical committee or send your check direct, payable to Navy Medical Department Historical Fund, and mail to:

Treasurer, N. M. D. Historical Fund
Bureau of Medicine and Surgery (Code 14)
Department of the Navy
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Policy

The U. S. Navy Medical News Letter, is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be, nor are they, susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

* * * * *

Management of Iron Deficiency Anemia

Few diseases in medicine can be diagnosed so easily and treated so effectively as iron deficiency anemia. Unfortunately, this anemia is often not diagnosed properly. Even more frequently, its treatment is haphazard or ineffectual.

Since the introduction of red blood cell constants by Wintrobe, anemias have been classified into three main categories: (1) macrocytic, (2) normochromic normocytic, and (3) hypochromic microcytic. Iron deficiency produces the last, a hypochromic microcytic anemia. In this type of anemia, the mean corpuscular volume is less than 80 cubic microns (normal 82-92), and the mean corpuscular hemoglobin concentration is less than 32% (normal 32-37).

The world over, iron deficiency anemia is probably the most common form of blood disorder. In the United States, at present it is about equal in frequency to simple chronic anemia. The latter anemia, as characterized by Wintrobe's constants is normochromic normocytic. This type is often seen in malignant neoplasms, chronic infections, or inflammatory diseases, as well as in other conditions. In the United States, there is no geographic predisposition to hypochromic microcytic anemia. However, it is related to poor social and economic conditions in backward areas where deficiency of dietary iron accompanies other nutritional deficits.

Hypochromic anemia is seen in all age groups, but it has greater prevalence during infancy, adolescence, and women's reproductive years. The adolescent girl, whose menses are frequently irregular and excessive, who is growing rapidly, and who often indulges in food fads, may easily develop iron deficiency anemia. With transfer of iron from maternal stores to the fetus, blood loss at the time of delivery, and increased iron excretion in the mother's milk, pregnancy, childbirth, and lactation take their toll of iron.

Throughout these various periods, further reduction of iron stores may be produced by chronic hemorrhage from any source.

Finally, the aged, with no teeth or with ill-fitting dentures and frequently with no desire to eat, may fail to keep pace with iron losses from chronic slight bleeding or rarely even with normal iron excretion. Thus, iron deficiency anemia may be present at any age from infancy to senescence.

It is estimated that of all cases of iron deficiency in this country, 90% occur in women. This is not difficult to explain when it is realized that the iron loss from menses and childbearing, plus a tendency to eat less substantial diets in the hectic pace of rearing children or maintaining a slim waistline. The difference in sex incidence of hypochromic anemia tends to disappear in children and in adults after menopausal age.

In general, the symptoms of iron deficiency anemia are common to other forms of anemia: pallor, easy fatigability, irritability, weakness, dyspnea, palpitation, giddiness or even syncope, tinnitus, anorexia, flatulence, constipation, and often menstrual abnormalities varying from menorrhagia to amenorrhea. Most of these complaints appear slowly and insidiously with their onset difficult to date.

The symptom complex of glossitis, dysphagia, hypochlorhydria, and hypochromic anemia—Plummer-Vinson syndrome—is rarely seen in the United States.

All that is needed for the diagnosis of hypochromic anemia in most cases is a well-stained blood film. The red blood cells are smaller than normal (microcytosis) with a thin rim of pink-staining hemoglobin surrounding a large clear central area like a rubber washer (hypochromia). Some of these hypochromic cells may assume the appearance of a bull's-eye and are called target cells. Furthermore, instead of the usual uniformity of similar sized erythrocytes, the film in iron deficiency anemia shows considerable variation in size (anisocytosis) and shape (poikilocytosis). Examination of the stained blood film—which takes no longer than five minutes—is too often neglected. Frequently, the patient with simple hypochromic anemia is given an expensive course of vitamins and liver extract when iron is the only treatment needed.

Specific causes of iron deficiency anemia are: menstruation, pregnancy and hemorrhage.

Hemorrhage is almost invariably the cause of iron deficiency anemia in adult males. In any investigation of the site of hemorrhage in the male, the gastrointestinal tract must bear the brunt of suspicion. One can usually discount bleeding gums as a source of blood loss sufficient to cause iron deficiency. However, the small telangiectases seen on the tongue, buccal mucosa, palate, and pharynx should call attention to hereditary telangiectasis. This is a source of blood loss that is often quite significant due to lesions in the stomach and bowel. Esophageal neoplasms and varices are

potential sources of blood loss, usually easily demonstrated radiographically or by direct visualization. Likewise, the stomach is a frequent source of chronic blood loss sufficient to produce iron deficiency anemia. Peptic ulcer or gastric neoplasms usually can be demonstrated by roentgen examination or gastroscopically. More difficult unless specially searched for are the ulcerations of the mucosa caused by hiatus hernia. Gastritis without discrete erosions may be responsible for chronic bleeding and may be extremely difficult to demonstrate.

In any consideration of the gastrointestinal tract as a source of blood loss, one must remember that this loss may be intermittent and not demonstrable in a single or even in several examinations of stools for occult blood. Furthermore, it has been shown that bleeding into the proximal portions of the bowel can occur so slowly that as much as 30 cc. of blood can be lost daily without producing a positive stool guaiac test. For purposes of emphasis, this might amount to almost a liter of blood lost per month—certainly, enough to produce iron deficiency anemia in a short time.

Hemorrhages from other sites, such as nosebleeds, wounds, or urinary blood loss, are usually readily noticed and present little problem in determining the basis of hypochromic anemia. Another source of blood loss which may escape attention unless specifically sought is blood donation. Donation of only three pints a year requires the absorption of 1.7 to 2.1 mg. of iron per day above the basic requirements in order that iron deficiency may not ensue.

It cannot be too strongly emphasized that iron deficiency anemia in an adult male is due to blood loss almost without exception. To ascribe hypochromic anemia in a man to inadequate dietary iron intake is almost always erroneous.

In the treatment of iron deficiency anemia, there are two basic points to consider: (1) correction of the hemoglobin and tissue iron deficiency, and (2) recognition and, if possible, correction of the cause for the anemia which in the preponderance of cases will be due to blood loss. Usually, the second phase of therapy is by far the more important.

Ferrous salts are better absorbed than ferric compounds so that the former are most frequently employed therapeutically. Ferrous sulfate and ferrous gluconate are among the least expensive iron salts and have been repeatedly demonstrated to be effective.

The response to iron administration in hypochromic anemia is often dramatic. Within 24 to 48 hours, the patient may experience a welcome sense of well-being and note an increased—sometimes ravenous—appetite. Reticulocytes begin to rise in 5 to 7 days, not infrequently reaching a 10 to 15% peak at the tenth to fourteenth day of treatment, returning to normal after about 3 weeks. The height of the reticulocyte response is inversely proportional to the initial hemoglobin level. About the seventh to tenth day, the hemoglobin begins to rise and regenerates at a rate of approximately 0.2 gm. per day, with return to normal levels in 4 to 8 weeks.

If no response to adequate doses of iron is observed, the following reasons must be considered: (1) the diagnosis of iron deficiency anemia was incorrect; (2) blood loss is continuing at a rate greater than hemoglobin regeneration; (3) superimposed infection, malignancy, inflammation, or uremia prevent utilization of iron in hemoglobin synthesis; (4) the patient is failing to take the iron medication as directed; (5) absorption of the orally administered iron is defective. (Brown, E. B. Jr., The Management of Iron Deficiency Anemia: GP, XVII: 87-94, February 1958)

* * * * *

Farmer's Lung

A disease entity of considerable importance to agricultural workers, particularly to those engaged in dairy farming, has received but scant attention in the American literature. In Great Britain and Scandinavia, the illness has been described variously as "farmer's lung," "thresher's lung," "harvester's lung," "bronchomycosis feniseiorum," a form of lung mycosis, and as a pneumoconiosis. Finally, "hemp disease," as reported in Norway, would appear to be similar to these other entities.

Twenty-seven cases have been collected, some of which have been followed up to 6 years. Recent follow-up examination has been carried out to evaluate the presence of complications and permanent disability. As in most disease processes, gradations in severity occurred, but questionable variations of the syndrome have been excluded as have all cases representing the more commonly known manifestations of allergy.

The syndrome develops after exposure to dusts which are usually moldy and most often associated with the handling of moldy hay or silage. Moldy grains were occasionally indicted, and even plain silage was not infrequently at fault. Symptoms in a few followed inhalation of the "steam" of silage, but this occurred weeks after ensiling, on "opening" the silo and, therefore, would not likely be due to nitrous dioxide, the agent believed responsible for silo-filler's disease as recently described by Delaney, Schmidt, and Stroebel, and by Lowry and Schuman.

Shredded corn stalks and dust from fresh hay and grain were also responsible for some cases despite repeated denial of any element of associated mold. Following the first attack, most cases reported recurrent symptoms after exposure not only to the original offending agent, but to a wide variety of the dusts mentioned which strongly suggests a broad cross sensitization.

A minor form of the disease apparently occurs, causing dyspnea, chills and fever, and night sweats lasting a day or two after exposure to clouds of dust associated with threshing fresh grain. The symptoms pass quickly and the few cases seen complained of no permanent disability. None are included in this series.

Despite variation in severity, a typical acute episode following exposure to the causative agent is characterized by increasing dyspnea, cough which is usually nonproductive, fever and chills, night sweats, and weight loss.

Dyspnea occurred in every case. Although mild to moderate in a few, in most it was the major difficulty, not infrequently associated with cyanosis, and in several requiring administration of oxygen. The weight loss was severe when it occurred, varying from 5 to 65 pounds and averaging 29 pounds. A few patients complained of fatigue, muscle aching, headache, or chest pain; three patients stressed the terrible odor of the drenching sweats they experienced. Seventeen patients were hospitalized at some time during the course of illness.

Despite recovery after a variable period of weeks, the patient complained frequently of permanent limitation of exertional capacity. Following the initial attack, later exposure to the inciting agent, or to one of a variety of such agents, precipitated recurrence of symptoms—particularly dyspnea. In some, exposure to even the spore laden barn air may be responsible for such recurrence.

After repeated episodes, progressive disability occurred with pulmonary emphysema, fibrosis, and right sided heart strain. These patients almost invariably complained of recurrent seasonal "colds" or "fullness" in the chest on exposure to dusts which usually were caused by handling moldy hay or silage. In all cases, the symptoms were far worse in the winter than in the summer.

The onset of the disease followed three clinical patterns, and the patients were almost evenly divided between these groups:

Group I (11 cases). These constituted the most spectacular cases with the acute attack following a single exposure to unusual quantities of the inciting agent which was severely moldy hay, grain, or silage in all but one case. The exception was exposed to silage "steam" on opening the silo.

Group II (9 cases). Symptoms occurred following repeated exposure to unusually moldy hay, grain, or silage over a period of time—usually a winter season—with constant handling of the material. In only one case was exposure to moldy dust denied, this by a farmer repeatedly exposed to fine particulate matter produced by grinding hay in a hammer-mill for feed. All other cases stressed the unusual moldy quality of the material for that particular year.

Group III (7 cases). These patients complained of symptoms of a variable degree of severity following exposure to different inciting agents over a period of years. The severe acute exacerbation then occurred without any one particularly outstanding episode of exposure. Interestingly, these patients were concerned mostly with apparent sensitization to corn silage rather than to moldy hay.

Two fundamental reactions are considered to be involved in the disease process: There is an initial pulmonary response to inhalation of organic dusts involving a granulomatous reaction with associated interstitial fibrosis; Later sensitization to such dusts is believed to occur and there is progressive pulmonary fibrosis on repeated exposures.

Some permanent pulmonary disability may follow the initial attack, and increasingly severe disability is certain to take place on repeated exposure once sensitization has occurred.

The dusts involved are most often due to severely moldy hay, grain, or silage, and the heavy fungal spore content of such dusts is believed to be largely responsible for the disease, although the syndrome is rarely due to vegetable dusts which are not significantly moldy. The pulmonary reaction to the fungal spores is due to their action as inhaled foreign material and the disease is not believed to represent a pulmonary infection or mycosis.

In the majority of cases, developing the disease—even if only a single attack—a change of occupation should be strongly recommended. Preventive measures should be advocated widely in an effort to save the individual farmer from developing an economically disastrous disease.

A great deal is as yet unknown regarding the causation and mode of progression of farmer's lung, but present knowledge would seem to warrant regarding it as a form of pneumoconiosis due to organic dust. (Frank, R. C., Farmer's Lung - A Form of Pneumoconiosis Due to Organic Dusts: Am. J. Roentgenol., 79: 189-213, February 1958)

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Staphylococci

Unlike the situation in virtually every other human infection caused by cocci, there is now no clearly described best antimicrobial therapy for penicillin-resistant staphylococcal infections. This report is concerned with *in vitro* studies upon staphylococcal growth as inhibited by eight antimicrobial agents used singly and in various combinations and with observations made in the management of 60 cases of serious staphylococcal infections in adults.

Staphylococci are ubiquitous—all are constantly exposed to high numbers of them. Although epidemiologic studies about infections caused by them are important, it is reasonably clear that infection can be determined by a variety of events not necessarily related to source nor to the biologic characteristics of the strain itself. There is no doubt that a number of apparently healthy people develop serious staphylococcal infections spontaneously, and that its occurrence in this setting does not diminish the over all intensity of the infection or its outcome. In the present series, for example, the worst and most fulminating infections developed in patients prior to hospital admission. Of the

29 cases of septicemia, 17 were established when the patient was hospitalized; 10 of these died.

Serious staphylococcal infections, however are most commonly observed in patients with some chronic underlying disease process. Presumably, such individuals carrying or exposed to others carrying staphylococci may develop an abscess and subsequent bacteremia as a result of some break in body defenses initiated perhaps because of a deteriorating or spreading underlying illness, or because of trauma or a manipulative procedure.

Or the opposite may obtain; a minor or latent infection may produce a worsening of the patients' underlying disease; thereafter, the infection becomes clinically more serious. Age by itself is not an important determinant to infection. For instance, in the present series of 60 cases, 23 were under 45 years of age (13 in 29 cases of sepsis). It must be emphasized also that penicillin-resistant strains are not always isolated solely from hospital acquired infections. They are the cause of infections in persons without prior hospital experience; in this study, 25 of 30 strains isolated from patients whose infection developed prior to admission were resistant to penicillin. Conversely, not all hospital acquired infections are caused by resistant strains; 8 of the 30 in the present series were sensitive.

The development of a localized infection generally precedes dissemination and sepsis, but this sequence is not always clinically evident; occasionally, the first lesion is small and/or transient and may be overlooked.

There is another significant feature in clinical infections caused by staphylococci which was common in both groups of patients. The vast majority of individuals, prior to the staphylococcal infection, had been receiving one or more antimicrobial agents for a variety of indications, such as another infection or for prophylactic reasons. Twenty-nine of the 30 patients whose infection developed while in the hospital were receiving them when the staphylococcal infection supervened; 10 of 30 who came to the hospital with the infection already established had similarly received drugs immediately preceding the infection. Presumably, such therapy had altered their standard bacterial flora and the change may have added to opportunities for invasion and superinfection by staphylococci. This facet of staphylococcal infections deserves more detailed study.

In the present series of 60 cases, a combination of erythromycin and chlormaphenicol was used as the major regimen in 43, including 6 of the 13 cases caused by penicillin-susceptible strains. Treatment of the remaining cases was extremely varied with penicillin and streptomycin, plus one or more other agents, being the common prescription.

This report describes laboratory methods designed to demonstrate the efficacy of a substitute for penicillin, and clinical experiences with the best of the substitutions so far observed. Although hardly comparable with respect to numbers of organisms killed and the speed of killing, erythromycin

and chloramphenicol in combined large dosage have proved to be an effective combination to control growth of penicillin-resistant organisms. These two—with perhaps bacitracin for a few days—have proved to be as effective a combination in therapy of human infections as has been described. No other single drug or combination of drugs (antimicrobial therapy) has been shown to be better—consistently, at any rate.

The authors' impression both in vitro and in vivo is that staphylococci whose resistance to penicillin is greater than 0.15 u/ml. produce penicillinase and are for practical purposes penicillin-resistant. Penicillin in clinical therapy is useless in infections caused by those strains of staphylococci. Similarly, other single drug therapy has resulted in increasing numbers of strains of staphylococci resistant to multiple other agents. In such circumstances also, the agent is of no clinical value.

Regardless of the importance of the epidemiologic aspects of penicillin-resistant staphylococci, it cannot be concluded that the infection hits only old persons in the hospital whose admission was necessitated by some other debilitating noninfectious disease. Although uncommonly seen in a setting of good health, penicillin-resistant staphylococcal infections occur at all ages, in patients well removed from exposure to hospital personnel, and without known experience to a contaminated source. They do, however, probably occur more often in patients receiving antibiotics for some non-specific "prophylactic" reasons than in patients not so "protected."

Energetic, but not unreasonably radical, therapy for disseminated penicillin-resistant staphylococcal infections is indicated. A significant reduction in mortality is anticipated, although the lowering is not so great as had been hoped. To date, no agent or combination of agents is as efficacious as penicillin was in the era when the majority of isolated strains were sensitive to it. Adjuvant therapy is essential if there is localization of the infection; with pus, particularly, surgical drainage is required. (Bunn, P., et al., Staphylococci - On the Ubiquitous Nature of Human Infections and Their Control by Antimicrobial Agents, Singly, or in Combination: Ann. Int. Med., 48: 102-111, January 1958) (Refer: Medical News Letter, Vol. 30, No. 4, Page 17, 23 August 1957, and: Vol. 31, No. 4, Page 13, 21 February 1958)

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Sympathectomy for Raynaud's Phenomenon

In this report, the results of surgical sympathectomy are evaluated in 70 women with Raynaud's disease in whom adequate follow-up information exists, and in 54 women with secondary Raynaud's phenomenon.

The diagnosis of Raynaud's disease was established either preoperatively or postoperatively in all cases by reference to the criteria of Allen and Brown. Stated briefly, these criteria are (1) episodes of Raynaud's

phenomenon excited by cold or emotion; (2) bilaterality of Raynaud's phenomenon; (3) absence of gangrene, or if present, its limitation to minimal grades of cutaneous gangrene; (4) absence of any other primary disease that might be causal, such as occlusive arterial disease, atherosclerosis, cervical rib, or organic disease of the nervous system, and (5) symptoms for at least 2 years. Cases of secondary Raynaud's phenomenon were carefully excluded.

Follow-up data were obtained by questionnaire, by reexamination at the clinic, or both.

Ninety-three percent of the patients were less than 40 years old and 70% were less than 30 years old when symptoms of Raynaud's disease were first noted. Seventy-three percent were less than 40 years of age when sympathectomy was undertaken. The shortest duration of Raynaud's phenomenon at time of sympathectomy was 1 year for 3 patients, and the longest duration of symptoms before operation was 23 years for 1 patient. The mean duration of symptoms before operation was 7 years. Eighty-one percent had had symptoms for 10 years or less. Six patients were operated on less than 2 years after onset of symptoms, but for all, follow-up data were more than adequate to satisfy the fifth criterion of Allen and Brown.

Raynaud's phenomenon occurred in the fingers of both hands of all 70 patients. Fifty-one patients noted vasomotor phenomena in the toes also, and the nose of one was similarly affected. Exposure to cold was the only precipitating factor for Raynaud's phenomenon cited by 46 women. The remaining 24 stated that emotional reactions as well as exposure to cold were responsible. Only 2 patients gave a family history of Raynaud's disease.

Thirteen of the 70 patients were sufficiently troubled by various functional and neurotic symptoms (exclusive of migraine headache) to warrant their inclusion among the final diagnoses. Ten patients had migraine headaches, and 2 had arterial hypertension (greater than 150 mm. Hg systolic and 90 mm. Hg diastolic).

Eighty-nine operations to interrupt sympathetic nervous pathways were performed on the 70 women with Raynaud's disease and the types of procedure employed are listed by table. Sympathectomy was performed on 52 women for the upper extremities only, for the lower extremities only for 2 women, and for both the upper and the lower extremities for 16 women. More extensive ganglionectomy was performed on 2 women who had obtained no relief from earlier ganglionectomy. Each is included as only 1 operation in a second table. Three women underwent cervicothoracic ganglionectomy after resection of the thoracic trunk had failed to give relief. Only the final result for each patient is included in subsequent tables. Bilateral procedures were considered and evaluated as one operation because in most cases the responses between paired denervated extremities did not vary appreciably.

The cervicothoracic ganglionectomy of Adson consists of the extirpation of the stellate ganglion and, usually but not always, of the second thoracic

sympathetic ganglion through a posterior approach. It is a postganglionic sympathectomy. Resection of the thoracic trunk, proposed independently by Smithwick and Telford consists of dividing the sympathetic chain between the third and fourth thoracic ganglia and dividing the rami to the second and third ganglia. The second and third thoracic nerves are divided proximal to the sensory root ganglia. No ganglia are removed and hence this is a preganglionic sympathectomy. The anterior rhizotomy performed for 1 patient was a variation of the preganglionic sympathectomy.

The period of postoperative follow-up for these 70 women varied from 1 to 28 years; the mean was 12 years. The mean period of follow-up after cervicothoracic sympathectomy was 11 years, and after lumbar sympathectomy, 14 years.

In addition to the 70 women with Raynaud's disease, 54 women with Raynaud's phenomenon secondary to other diseases were also subjected to sympathectomy of the upper or lower extremities or both, prior to 1946. The diagnoses included acrosclerosis (37 patients), rheumatoid arthritis (5 patients), livedo reticularis or acrocyanosis (5 patients), chronic occlusive arterial disease (2 patients), and chronic pernio, periarteritis nodosa, scalenus anticus syndrome, indeterminate hemorrhagic diathesis, and indeterminate disease of the central nervous system (1 patient each). Sympathectomy, although giving better results in the lower than in the upper extremities, was successful much less frequently than in primary Raynaud's disease. The majority of good or excellent results were obtained in the patients with acrocyanosis, livedo reticularis, scalenus anticus syndrome, and chronic pernio. Sympathectomy was followed by major or minor amputations in 6 patients in this group. Nineteen (35%) of the women with secondary Raynaud's phenomenon were dead at the time of follow-up. The average age at death was 39 years.

Errors in the diagnosis of Raynaud's disease will lead to disappointing results from sympathectomy because Raynaud's phenomenon secondary to other diseases (notably acrosclerosis) usually responds poorly to sympathectomy.

Sympathectomy for Raynaud's disease affecting the upper extremities gave good or excellent results in 37 (54%) of 68 women in this series. Good or excellent results were obtained more frequently if complications of Raynaud's disease (trophic lesions or sclerodactylia or both) were not present before operation. There was no significant difference between the results obtained by preganglionic and postganglionic sympathectomies. Two (3%) of the 68 patients lost portions of fingers after sympathectomy. Of the patients who had a fair or poor long-term result, the majority initially obtained a good result and then had relapses during the first 2 years after sympathectomy.

Sympathectomy for the lower extremities gave good or excellent results for 17 (94%) of 18 women with Raynaud's disease. Sympathectomy

for Raynaud's phenomenon secondary to other diseases gave poor results in the upper extremities in 72% of cases and only slightly better results in the lower extremities.

Sympathectomy should be reserved for patients with the more severe and progressive Raynaud's disease, because the prognosis is good without sympathectomy when the disease is mild or moderately severe and not progressing. (Gifford, R. W. Jr., Hines E. A. Jr., Craig, W. McK., Sympathectomy for Raynaud's Phenomenon - Follow-Up Study of 70 Women with Raynaud's Disease and 54 Women with Secondary Raynaud's Phenomenon: Circulation, XVII: 5-12, January 1958)

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Buckling of the Aortic Arch

Since the first report of buckling of the aortic arch by Souders et al., in 1951, occasional reports have appeared in the literature substantiating their observations and more firmly establishing this anomaly as a distinct anatomic and roentgenographic entity. Because most of these reports have appeared in nonradiologic literature and recognition and understanding of the roentgenographic appearance is not generally appreciated, it seems warranted to report four such cases seen by the author. In all, perhaps fewer than 35 cases have been referred to in the English literature.

In essence, one is speaking of an anomalous buckling or kinking in the contour of the aortic arch, located at the usual site of insertion of the ligamentum arteriosum. The abnormal aortic contour thereby produced may simulate aortic coarctation, aneurysm, or mediastinal tumor and may result in unnecessary surgery, radiation therapy, or angiocardiology. Each of these errors of diagnosis is described.

The buckling or kinking in all reported cases occurred at the aortic isthmus in the region of insertion of the ligamentum arteriosum. Where accurate observations have been made, the ligamentum is reported to be unusually short. Due to, or coupled with, the short ligamentum is a posteriorly directed double convexity of the aortic arch and upper descending aorta centered about the point of fixation of the aorta. The portion of the arch above the kink generally extends higher into the superior mediastinum than usual, then descends to the point of the kink, deviates abruptly posteriorly and to the left, then descends to the right. There is no regularity, however, of the exact aortic course in the reported cases. It should be stressed that the buckling described produces no significant reduction in the aortic lumen.

The postero-anterior view nearly always provides the initial clue to aortic buckling. In this projection, one sees in the shadow of the descending arch an indentation produced by the profile of the anomaly. In some

instances, the appearance is only that of a generous-sized aortic "knob" with an abrupt indentation at its inferior pole and a second convexity in the descending arch below this point. Others present a double convex contour of the "knob" with the superior of the two convexities less dense than the inferior. The upper density is produced by the portion of the arch proximal to the kink, while the lower represents the devious aortic course just distal to the anomaly. At times, the upper arch is largely obscured by the thoracic vertebrae and the lower convexity simulates an inferiorly displaced knob. It is the portion of the arch distal to the kink which produces an indentation on the barium-filled esophagus in such cases. While it is the postero-anterior view which suggests the diagnosis, it is the lateral or left anterior oblique view which generally confirms the suspicion. In the latter projections, one can identify the abrupt indentation on the posterior and left lateral surface of the aorta at the expected level of ligamentum arteriosum insertion. If any significant difference exists in the aortic diameter proximal and distal to the anomaly, it is the distal portion which may be slightly dilated.

Aortic buckling is a rare congenital anomaly of the course and contour of the aortic arch occurring at the level of insertion of the ligamentum arteriosum. It is probably associated with, or is perhaps due to, a short ligamentum arteriosum.

A typical roentgenographic appearance is presented which must be differentiated from aortic aneurysm, coarctation, mediastinal tumor, and patent ductus arteriosus. Postero-anterior and lateral roentgenograms with lateral planigrams will provide proof of the diagnosis in most cases. Angiocardiography or retrograde aortography may be utilized if further clarification is necessary. Roentgenographic evidence of buckling is accentuated by the degenerative changes of senescence.

A precordial systolic murmur is the only associated objective finding. The patients are asymptomatic and need no treatment. (Stevens, G. M., Buckling of the Aortic Arch (Pseudocoarctation, Kinking) - A Roentgenographic Entity: Radiology, 70: 67-73, January 1958)

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Liver Biopsy

Most authorities agree that the discriminative use of needle biopsy of the liver outweighs its dangers, and in experienced hands with proper precautions, the risk to the patient is almost negligible. The number of excellent reports on liver biopsy that have appeared in recent years underline the increasing importance of this procedure and its contribution to the study of liver disease. So far, it has had its widest application clinically and has become one of the main diagnostic tools in the differential

diagnosis of a wide range of liver diseases. Zamcheck and Sidman have recently listed a number of other diseases not primarily hepatic in origin in which liver biopsy has been usefully employed. These include such varied conditions as amyloidosis; Wilson's disease; hemochromatosis; syphilitic cirrhosis; cardiac cirrhosis; granulomatous diseases, such as leprosy, brucellosis, sarcoid, and fungus infections; inflammatory diseases, such as infectious mononucleosis, Weil's disease, and toxic hepatitis from cinchophen, chloroform, and arsenic poisoning; certain focal necroses, such as tularemia, syphilis, liver abscess (both bacterial and amebic), periarteritis nodosa, lupus erythematosus, leukemia, Hodgkin's disease, and a number of parasitic diseases, such as kala-azar and schistosomiasis. Its potentialities for basic histopathological and chemical research are also increasingly recognized and the indications for its use are now well defined.

With the opening of the University College Hospital of the West Indies in September 1952, it soon became evident that a number of conditions were occurring locally in which a detailed knowledge of the histological and biochemical changes in the liver would be of value. Some of these—kwashiorkor, marasmus, and sickle-cell anemia—occur in other tropical countries and have been the subjects of many previous reports. Others, however, such as veno-occlusive disease of the liver and the vomiting sickness of Jamaica, had not been reported from other areas and detailed clinical, histological, and biochemical studies of the associated hepatic changes had not been previously undertaken. In the study of these conditions, liver biopsy was used with particular advantage (1) as a clinical tool—especially when serially performed—in establishing the clinical diagnosis; in following the course of the disease and in assessing prognosis and response to treatment; and (2) as an investigative procedure in determining the type, duration, and severity of the pathological and biochemical changes in a number of cases in which the clinical diagnosis was not in doubt. In this article are given (1) a clinical outline of some less widely known diseases which have been studied by liver biopsy—veno-occlusive disease of the liver, kwashiorkor, marasmus, and the condition which has been known in Jamaica for many years as "vomiting sickness;" (2) the histopathological and biochemical information obtained from liver biopsy in these conditions and its unique contribution to present understanding of them; (3) the advantages of simultaneous histopathological and chemical examination of portions of the tissue obtained at biopsy; (4) the authors' experience with liver biopsy in some of the more familiar clinical circumstances, such as unexplained hepatomegaly, splenomegaly, and jaundice. The liver-biopsy findings in sickle-cell anemia, nephrosis, diabetes, a neuropathic syndrome probably nutritional recently reported from Jamaica, and other miscellaneous conditions are also described.

Five hundred twenty-seven biopsies were performed on 330 patients. The conditions studied included kwashiorkor, marasmus, veno-occlusive

disease of the liver, vomiting sickness, diabetes mellitus, various neuropathies, nephrosis, sickle-cell anemia, and unexplained hepatomegaly, splenomegaly, jaundice, pyrexia, and anemia.

A clinical outline is given of veno-occlusive disease, kwashiorkor, marasmus, and the vomiting sickness of Jamaica. The tissue obtained at biopsy was examined histologically in all cases. In a number of cases, chemical examination of the liver tissue was also performed. The chemical studies included nucleic acids and protein, water, and fat content, and glycogen estimations.

In the malnutrition group, it is shown (a) that the degree of fatty infiltration is no indication of the severity or probable outcome of the disease; (b) that hepatic protein depletion is severe in these infants, but that its degree cannot be quantitatively correlated with the clinical picture or prognosis; and (c) that fatty infiltration does not apparently interfere with the ability of the liver to store glycogen.

Occlusion of the smaller and medium-sized branches of the hepatic veins is responsible for the hepatomegaly and ascites found clinically in veno-occlusive disease. The prognosis of veno-occlusive disease is linked with the severity of the associated hepatocellular damage.

Serial biopsies have made it possible to define more accurately the clinical natural history of this disease. In cases that recover, the histological appearances of the liver return to normal. When the disease advances to the chronic stage, a progressive nonportal cirrhosis is found to develop in biopsy specimens.

The histological changes of the liver in diabetes are minimal and cannot be correlated with the response to treatment, clinical hepatomegaly, or alteration of liver-function tests.

The hypoglycemia of vomiting sickness is associated with severe depletion of hepatic glycogen which is rapidly restored by successful glucose therapy. There is a high incidence of fibrosis of the liver in patients with sickle-cell anemia, and a possible etiologic relationship is suggested.

Because of the frequently mixed nature of hepatic cirrhosis in the tropics and the variability of the clinical syndromes presented, liver biopsy is a useful and often essential tool for establishing a correct diagnosis. Its uses in unexplained hepatomegaly, jaundice, and splenomegaly have also been demonstrated. It is also pointed out that liver biopsy often makes it necessary to alter an apparently firmly established clinical diagnosis.

The advantages of simultaneous histopathological and chemical examination of portions of the tissue obtained at biopsy are stressed. (Stuart, K. L., et al., Further Clinical and Investigative Uses of Liver Biopsy: Arch. Int. Med., 101: 67-81, January 1958)

* * * * *

Supervoltage Therapy in Cancer of the Bladder

Much has been written in regard to various types of irradiation for carcinoma of the urinary bladder. Most of these reports and studies have been concerned with the interstitial use of radium or radon and conventional x-ray therapy. Most authorities have agreed on the inadequacies of this kind of therapy for many cases of carcinoma of the bladder. With the availability of supervoltage, it was felt that the problem of irradiation of bladder carcinoma should be reevaluated.

All patients with carcinoma of the bladder seen in the Urology Department at M. D. Anderson Hospital, Houston, Texas, were evaluated with the Radiotherapy Department for disposition. Since April 1954, the emphasis has been directed towards radical irradiation with supervoltage. Except for those cases with superficial low grade carcinoma which were handled transurethrally, irradiation was given precedence over other forms of surgical procedure. The majority of patients were referred to a state cancer hospital and, therefore, included failures of other types of treatment. In addition, many patients in this group have been referred directly to the Radiation Therapy Department by private urologists in and near Houston. Since the program of supervoltage radiation of bladder carcinoma was started, the authors have treated by external irradiation with supervoltage some lesions which otherwise could have been treated with interstitial or intracavitary irradiation.

In planning the treatment, the aim has been to treat the empty whole bladder. The authors' decision to treat the whole bladder rather than a part of it, and to prefer external irradiation in cases which could have been handled by interstitial or intracavitary irradiation has been influenced by Roger Baker's demonstration of circumferential lymphatic spread of cancer cells along the muscle wall. In whole-organ studies of infiltrating carcinoma of the bladder, this author found presence of malignant cells in the lymphatics of the bladder wall. In some cases, over 50% of the bladder circumference was involved—well beyond the limits of the visible and palpable disease. As Baker pointed out, these findings require a more radical surgical approach to bladder cancer and from the authors' standpoint they require more radical irradiation.

The advantages of the supervoltage over the traditional standard x-ray therapy are well known. The greater depth dose and the skin-sparing effect permit one to obtain a large tumor dose in deep-seated tumors with minimal skin reactions. The general tolerance of patients to this type of therapy is greatly improved. It is particularly striking in supervoltage irradiation of the urinary bladder that the local reaction and urinary symptoms are definitely milder than in cases treated with conventional therapy. This allows more satisfactory treatment without interruption due to severe symptomatology of the patient and reduces considerably the complications following radiation therapy.

All of the authors' cases were treated with either the cobalt-60 irradiator or with the betatron. In the first year, the patients were alternated between the two machines with the aim of finding whether there were differences in the tolerance reactions and immediate results. These factors were found to be fairly equal in both series; recently, therefore, preference has been given to the use of betatron in irradiation of cancer of the bladder because of better volume distribution. The use of the betatron has avoided the late fibrosis of the subcutaneous tissue in the suprapubic region which has occurred in some cases treated with cobalt-60. The authors now reserve the use of the cobalt-60 almost exclusively to those cases in which there is an involvement of the anterior wall of the bladder with extension into the prevesical space.

The modality of the radical treatment has been uniform. The whole bladder has been treated to a minimal tumor dose of 6000 roentgens in five weeks using a three-field arrangement.

All cases were followed with cystoscopies at varying intervals. In the earlier cases, a cystoscopy was performed one week after completion of the treatment to study the immediate bladder reaction and to further check the accuracy of the localization. This reaction consisted of a diffuse erythema of the bladder mucosa with pseudomembrane formation and bullous edema, especially surrounding the area of the tumor. This type of reaction was found consistently in all cases. The cystoscopies since then have usually been performed at one, three, six, and twelve-month intervals.

So far, the following impressions can be drawn from the authors' material and experience:

Patients with disease extending to the pelvic wall and patients with less extensive disease, but in poor general condition, are better treated with a palliative technique. Patients in these groups treated radically with high doses tolerate the treatment poorly and have more complications.

Previous irradiation of any type is a limiting factor in the use of x-ray treatment. There appears to be a definite relationship between recent suprapubic bladder surgery (especially partial cystectomy) and contracted bladder following irradiation. Presence of bladder neck obstruction or severe cystitis at the beginning of the treatment decreases the local tolerance to irradiation. Urinary diversion prior to irradiation may be essential in some cases. Women, especially in the older age groups, tolerate the treatment less satisfactorily.

Bladder surgery following irradiation supported the well known fact that irradiated tissue shows diminished healing capacity. The analysis of the superficial low-grade group has shown that the potentiality of the bladder mucosa to form new lesions is not eradicated by irradiation. Therefore, low grade, low stage lesions are probably best handled by transurethral surgery.

Recurrences that reveal increase in stage and/or grade, or lesions which cannot be adequately removed transurethrally can be eradicated by irradiation. High grade lesions, including undifferentiated and squamous carcinoma and lesions in stage B₂ and C should be treated radically. Super-voltage therapy in this group has been very encouraging and it appears to have definite place in the management of carcinoma of the urinary bladder. (Cuccia, C.A., Jones, S., Crigler, C.M., Clinical Impressions in 100 Consecutive Cases of Carcinoma of the Urinary Bladder Treated by Super-voltage: J. Urol., 79: 99-109, January 1958)

* * * * *

Total Adrenalectomy

Bilateral adrenalectomy has been carried out with increasing frequency in recent years for the control of certain types of carcinoma and for other diseases. Today, there are an increasing number of patients with no adrenal glands or with atrophied, poorly functioning, or nonfunctioning adrenal glands who must undergo oral operative procedures.

The totally adrenalectomized patient is usually on a maintenance dose of corticosteroid. The specific drug and dosage varies with each patient. On the basis of experience with totally adrenalectomized patients undergoing oral operative procedures, the authors' conclusion was reached that additional corticosteroid therapy must be provided to sufficiently cover the extra stress precipitated by the procedure as follows: 100 to 250 mg. cortisone by mouth in divided doses (in addition to the maintenance dose) during the preoperative 24-hour period and 100 to 300 mg. cortisone by mouth or hydrocortisone intravenously on the day of surgery. To err on the side of higher dosage is always wise.

Dental procedures are usually—perhaps erroneously—accepted as minor procedures by both the dental and medical profession. The amount of strain placed on the stress mechanism of the body during dental care may have been greatly underestimated.

Oral surgical operations must be performed on patients with varying degrees of adrenal insufficiency or failure which may result from such states as invasive or infectious adrenal disease; unilateral, bilateral, total, or subtotal adrenalectomy; or adrenal atrophy secondary to, or concomitant with, high prolonged corticosteroid therapy in such chronic diseases as rheumatoid arthritis.

Because the over all condition of each patient with adrenal insufficiency may differ considerably, it is not possible to plan for the routine management of all such patients with a rigid therapeutic regimen. The symptoms and signs of adrenal insufficiency should be recognized as varied and numerous. One or many of the following signs may be present in a given patient

as an indication of impending danger: (1) slight nausea or malaise only; (2) vomiting; (3) temperature which may be acute and high—as high as 105 degrees; (4) fall in blood pressure, gradual or sudden and even within the normal range of the patient; (5) increased pulse rate which may be gradual or sudden and even within the normal range of the patient; (6) derangement of fluid or electrolyte balance (decreased serum sodium and, particularly, increased serum potassium); (7) hypoglycemia; (8) shock; or (9) lethargy.

Because patients in whom bilateral adrenalectomy has been performed (after which oral surgical operations must follow) are relatively on the increase, the extraction of infected or potentially symptomatic teeth may be indicated routinely as a precautionary measure prior to total adrenalectomy.

Fear and nervous tensions contribute greatly to stress. To assess this factor in dental patients is most difficult, especially if their emotional history and physical actions while being treated are not well known to the dental operator. An intelligent patient is usually educated so that, if and when symptoms of adrenal insufficiency develop, he will ask for and take a supplementary dose of the drug. This is much like the training of diabetic patients with respect to insulin over-dosage.

However, it is mandatory in treating these patients for the responsible physician, in close cooperation with the dentist, to calculate and administer sufficient corticosteroid therapy to cover stress resulting from the emotional strain of the dental procedure. This is imperative in order to avoid adrenal insufficiency or failure which may quickly and suddenly result in an extremely serious emergency. All patients of this type must have careful medical supervision before, during, and after surgery. (Piro, J. D., Yandel, F., Kutscher, A. H., Oral Operative Procedures in the Presence of Total Adrenalectomy: J. Oral Surg., 16: 63-67, January 1958)

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Venereal Disease Seminar

The Venereal Disease Branch, Communicable Disease Center, Public Health Service, Department of Health, Education, and Welfare has notified the Surgeon General of the Navy that the following venereal disease meetings will be held in Philadelphia Pa.

May 12 and 13, 1958 - Annual Symposium on Recent Advances in the Study of Venereal Diseases.

May 14 and 15, 1958 - Venereal Disease Seminar.

Medical Department personnel in the Philadelphia area are invited to attend and participate in these seminars. More information can be obtained through local health departments. (PrevMedDiv, BuMed)

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Poison Control Centers

The general objective of a poison control center is to minimize the damage from potentially toxic substances by improving efforts at prevention and treatment of poisoning. More specifically, the primary objective is to make initial treatment (first aid) more prompt and effective. This is being accomplished by accumulating knowledge of potentially toxic substances and by making this knowledge more readily available; by increasing the knowledge of the general and specific treatment measures required and by making resources for treatment readily and continuously available; and by stimulating research for specific antagonists or antidotes for the more common and dangerous chemicals.

A second major objective is in the field of prevention. This is being accomplished by developing a better knowledge of the distribution and types of poisonings and circumstances under which the poison is likely to be taken; by interrupting the chain of circumstances that leads to poisoning; and by using all available community agencies and communication media for spreading information about poisoning.

The National Clearinghouse for Poison Control Centers, United States Public Health Service, has provided this Bureau with an up-to-date list of Poison Control Centers now in operation, (October 1957).

It is strongly urged that each medical activity abstract from the following list, the names, addresses, and phone numbers of the Poison Control Centers nearest to them. It would prove most useful to establish liaison with these centers so that needed information can be obtained with the least delay in the event of an emergency.

ALABAMA

Birmingham
University of Alabama Medical
Center
Stephen D. Palmer, M. D.
Phone: 53-3531

Florence
Eliza Coffee Memorial Hospital
Stanley Meigs, M. D.
Phone: AT 2-8321

ARIZONA

Phoenix
Maricopa County Medical Society
Paul B. Jarrett, M. D.
Phone: Alpine 8-8331

Tucson

College of Pharmacy
University of Arizona
Virginia M. Cobb, M. D.
Phone: MA 4-8181

CALIFORNIA

Berkeley
Herrick Memorial Hospital
Mr. Wight
Phone: Thornwall 5-0130

Los Angeles
University of California
Medical Center
Pere Minden, M. D.
Phone: Bradshaw 2-8911

Los Angeles
Children's Hospital Society
of Los Angeles
Mrs. Claire Barton, R. N.
Phone: Normandy 4-2121

Martinez
Contra Costa County Hospital
L. F. Girtman, M. D.
Phone: Martinez 3080

Oakland
Alameda - Contra Costa Medical
Association
David Singman, M. D.
Phone: Olympia 2-8171

Oakland
Children's Hospital of the East
Bay
Edith M. Myers, M. D.
Phone: Olympic 2-1143

Oakland
Highland-Alameda County Hospital
Walter Byers, M. D.
Phone: Kellogg 2-1122

San Francisco
Central Emergency Hospital
Erwin Sage, M. D.
Phone: Hemlock 1-2800

San Francisco
Children's Hospital
George Bates, M. D.
Phone: Bayview 1-1200

San Jose
San Jose Emergency First Aid
Station
Dwight Bissell, M. D.
Phone: Cypress 2-3141

San Leandro
Fairmount Hospital of Alameda
County
Phone: Elgin 1-8000

San Mateo
Community Hospital of San Mateo
Arthur Lach, M. D.
Phone: Fireside 5-5721

Santa Clara County
Santa Clara County Hospital
Milton Chatton, M. D.
Phone: Cypress 3-0262

San Rafael
Marin General Hospital
Phone: Glencourt 3-3110

COLORADO

Denver
Department of Health and
Hospitals
David Cook, M. D.
Phone: Tabor 5-1331

CONNECTICUT

Stamford
Stamford Hospital
Angelo Masterangelo, M. D.
Phone: Fireside 8-2681

DELAWARE

Wilmington
Delaware Hospital
Elmer F. Fantazier, M. D.
Phone: Olympia 5-3389

DISTRICT OF COLUMBIA

Washington
Children's Hospital
James W. Oberman, M. D.
Phone: Dupont 7-4220, Ext. 250

FLORIDA

Daytona Beach
Halifax District Hospital
Joel V. McCall, Jr., M. D.
Phone: Clinton 2-5561

Fort Lauderdale
North Broward General Hospital
John S. Fifer, M. D.
Phone: Jackson 2-3611

Fort Myers
Lee County Hospital
A. Louis Girasdin, Jr., M. D.
Phone: Edison 2-1141

Gainesville
Alachua General Hospital
William Hadley, M. D.
Phone: Franklin 2-4321

Jacksonville
St. Vincent's Hospital
J. K. David, Jr., M. D.
Phone: Evergreen 9-7761

Lakeland
Morrell Memorial Hospital
William S. Johnson, M. D.
Phone: Mutual 4-4211

Miami
Jackson Memorial Hospital
George Lister, M. D.
Phone: Franklin 1-9611

Ocala
Munroe Memorial Hospital
Harry M. Edwards, M. D.
Phone: Marion 2-4211

Orlando
Orange Memorial Hospital
Charlotte Maguire, M. D.
Phone: Orlando 3-5511

Panama City
Memorial Hospital of Bay
County
John J. Benton, M. D.
Phone: Sunset 5-7411

Pensacola
Baptist Hospital
Frank L. Debusk, M. D.
Phone: Hemlock 8-5423

St. Petersburg
Florida Pediatric Society
Mound Park Hospital
Ed Shaeffer, M. D.
Phone: Mound Park 5-1181

Sarasota
Sarasota Memorial Hospital
Henry G. Morton, M. D.
Phone: Ringling 6-8831

Tallahassee
Tallahassee Memorial Hospital
George S. Palmer, M. D.
Phone: 2-8060

Tampa
Tampa Municipal Hospital
James M. San, M. D.
Phone: 8-4321

West Palm Beach
Good Samaritan Hospital
Lawrence R. Leviton, M. D.
Phone: Temple 3-1741

GEORGIA

Albany
Phoebe Putney Memorial Hospital
M. Sutton, M. D.
Phone: Hemlock 6-3321

ILLINOIS

Chicago
Mercy Hospital
Joseph Christian, M. D.
Phone: Victory 2-4700

Effingham
St. Anthony's Hospital
Phone: 850

Evanston
Evanston Hospital
Phone: Greenleaf 5-2500

Evanston
St. Francis Hospital
Phone: Davis 8-2200

Evanston
Community Hospital
Phone: University 4-9400

Springfield
Memorial Hospital
Phone: 2-3361

Springfield
St. John's Hospital
Phone: 2-6881

INDIANA

Indianapolis
Poison Control Center
Irving Rosenbaum, M. D.
Phone: Walnut 5-1677

IOWA

Des Moines
Iowa Poison Information
Center
Everett A. Nitzke, M. D.

KANSAS

Topeka
Stormont-Vail Hospital
William H. Crouch, M. D.
Phone: Topeka 5-2361, Ext. 218

KENTUCKY

Louisville
Louisville General Hospital
William Curtis Adams, M. D.
Phone: Juniper 2-1831

LOUISIANA

New Orleans
Louisiana State University
School of Medicine
Charles S. Petty, M. D.

MARYLAND

Baltimore
Baltimore City Hospital
Phone: Dickens 2-5400

Baltimore
Johns Hopkins Hospital
Julian Chisholm, M. D.
Phone: ORleans 5-5500

Baltimore
University of Maryland
Hospital
Samuel Bessman, M. D.
Phone: Lexington 9-0320

MASSACHUSETTS

Boston
Children's Medical Center
Robert J. Haggerty, M. D.
Phone: Beacon 2-7800

New Bedford
St. Luke's Hospital
William Collins, M. D.
Phone: Wyman 9-6211, Ext. 359

Worcester
Worcester City Hospital
Robert D. Cox, M. D.
Phone: Pleasant 6-1551

MICHIGAN

Detroit
Herman Kiefer Hospital
Paul T. Salchow, M. D.
Phone: Trinity 2-3334

Grand Rapids
Butterworth Hospital
Mark W. Dick, M. D.
Phone: Glendale 1-3591

Grand Rapids
Blodgett Memorial Hospital
John Montgomery, M. D.
Phone: Glendale 6-5301

Grand Rapids
St. Mary's Hospital
C. E. Booher, M. D.
Phone: Glendale 9-3131

Pontiac
St. Joseph Mercy Hospital
Robert J. Mason, M. D.
Phone: Federal 4-3511

MINNESOTA

Minneapolis
Minnesota State Department of
Health
Warren Lawson, M. D.
Phone: Federal 9-7751

MISSOURI

Kansas City
Kansas City General Hospital #1
Beryl I. Burns, M. D.
Phone: Harrison 1-8060

Kansas City
Mercy Hospital
Wayne Hart, M. D.
Phone: Grand 1-5250

St. Louis
St. Louis Children's Hospital
J. N. Middelkamp, M. D.
Phone: Forest 7-6880

St. Louis
Homer G. Phillips City Hospital
J. N. Middelkamp, M. D.
Phone: Franklin 1-3100

St. Louis
St. Louis City Hospital
Virginia Peden, M. D.
Phone: Central 1-7300

St. Louis
Cardinal Glennon Memorial
Hospital for Children
James P. King, M. D.
Phone: Mohawk 4-7222

NEBRASKA

Omaha
Children's Memorial Hospital
Phone: Glendale 5400

NEW JERSEY

Atlantic City
Atlantic City Hospital
Samuel C. Southard, M. D.
Phone: Atlantic City 5-2112

Long Branch
Monmouth Memorial Hospital
Martin Rush, M. D.
Phone: Capitol 2-5200

Montclair
Mountainside Hospital
Louis Pilloni, M. D.
Phone: Pilgrim 6-6000

Newark

Babies Hospital
William H. Fost, M. D.
Phone: Humbolt 2-6200

Nutley

The Nutley Child Safety Program
William J. Farley, M. D.
Phone: Nutley 2-0139

South Orange

Orange Memorial Hospital
Robert E. Jennings, M. D.
Phone: 5-1100

NEW YORK

New York City
New York City Department of
Health
Harold Jacobziner, M. D.
Phone: Worth 4-3800, Ext. 680

Albany
Albany Hospital
Paul Patterson, M. D.
Phone: Albany 8-4541

Buffalo
Buffalo Children's Hospital
Donal Dunphy, M. D.
Phone: Summer 5-100, Ext. 242

Rochester
Strong Memorial Hospital
Charles C. Lobeck, M. D.
Phone: Greenfield 3-4400, Ext. 224

Syracuse
City Hospital
Virginia Harris, M. D.
Phone: Granite 6-3166

NORTH CAROLINA

Durham
OPD, Duke University Hospital
Jay Arena, M. D.
Phone: Durham 9011, Ext. 398

OHIO

Akron
Children's Hospital
Mr. P. A. Hoyden
Phone: Blackstone 3-5531

Cincinnati

The Kettering Laboratory
College of Medicine
Mitchell R. Zavon, M. D.
Phone: CA-1414

Cleveland

Cleveland Academy of Medicine
George Bedder, M. D.
Phone: Cedar 1-3500

Columbus

The Children's Hospital
Warren E. Wheeler, M. D.
Phone: Clearbrook 8-9783

OKLAHOMA

Oklahoma City
University of Oklahoma Medical
Center
H. A. Shoemaker, Ph.D.
Phone: RE 6-1511, Ext. 358

OREGON

Portland
Oregon Poison Control Registry
David W. MacFarlane, M. D.
Phone: Capitol 8-9181

PENNSYLVANIA

Harrisburg
Harrisburg Hospital
Rosemarie J. Tursky
Phone: Cedar 8-5221

Lancaster

St. Joseph Hospital
David B. Coursin, M. D.
Phone: Express 4-7181

Philadelphia

Philadelphia Department of
Public Health
Emil A. Tiboni
Phone: WA 2-5524

SOUTH CAROLINA

Columbia
Columbia Hospital
Henry Moore, M. D.
Phone: Alpine 4-7387

TENNESSEE

Knoxville
University of Tennessee Memorial
Research Center and Hospital
Robert F. Lash, M. D.
Phone: 4-2961

Memphis

Le Bonheur Children's Hospital
W. P. Stepp, M. D.
Phone: Jackson 5-6541

TEXAS

Galveston
John Sealy Hospital
S. G. Thompson, M. D.

Houston

Baylor University College of
Medicine
Harold L. Dobson, M. D.

UTAH

Salt Lake City
Salt Lake County Hospital
Alan K. Done, M. D.
Phone: Hunter 4-8612, Ext. 334

VIRGINIA

Richmond
Medical College of Virginia
Sidney Kaye, Ph.D.
Phone: Richmond 7-9851

WASHINGTON

Seattle
Children's Orthopedic Hospital
Donald H. Sutherland, M. D.
Phone: Fillmore 4300

Spokane

Deaconess Hospital
James M. Patton, M. D.
Phone: RI 7-4811

WISCONSIN

Milwaukee
Poison Control Committee
1513 East Capital Drive
F. J. Mellencamp, M. D.

HAWAII

Honolulu
Kauaikeolani Children's Hospital
Mr. J. Rhys
Phone: 5-4563

(OccMedDispDiv, BuMed)

Notes on Eighteenth Annual Congress
on Industrial Health

The Council on Industrial Health of the American Medical Association held its Eighteenth Annual Congress on Industrial Health, 27-29 January 1958 in Milwaukee, Wis. Captain L. B. Shone MC USN, Director, Occupational Medicine and Dispensary Division, attended as the representative for the Bureau of Medicine and Surgery.

Cooperating organizations were: The State Medical Society of Wisconsin, Medical Society of Milwaukee County, Wisconsin Academy of General Practice, Central States Society of Industrial Medicine and Surgery, and the Committee on Arrangements selected from the Industrial Health Committee of the Medical Society of Milwaukee County.

Doctor William P. Shepard, Chairman of the Council on Industrial Health, American Medical Association, was the General Chairman of the Congress and presided at the opening session and at the annual banquet.

Doctor Harry Kasten, President of the State Medical Society of Wisconsin, extended his greetings and emphasized that the purposes of these Congresses were to give the people of the United States a better type of medical practice and to keep medicine a free enterprise.

The following subjects which were covered by speakers and panel discussions during the three-day Congress have a direct application to naval medical practices performed for both military and civilian personnel on duty in various naval activities, such as shipyards, air stations, supply centers, ordnance depots, and aboard ships.

Public and Professional Relations in Occupational Health

General Aspects of Disability Evaluation

Underlying Philosophies and Current Concepts of Disability:

Viewpoint of Workmen's Compensation Administrators
Adjudicative Process in the Veteran's Administration
Schedule for Rating Disabilities, Veteran's Administration
Disability Provisions of the Old-Age Survivors Insurance
Program

Current Problems in Occupational Dermatoses

Development and Scope of Industrial Dermatoses
Oil Folliculitis
New Causes of Occupational Dermatoses
Causes of Prolonged and Recurrent Dermatitis
Evaluation of Disability

Low Back Pain

Prevention Through Medical Examination and
Selective Job Placement
Conservative Management
Surgical Management
Evaluation of Disability

Doctor Gunnar Gundersen, President-Elect of the American Medical Association, gave the main address at the annual banquet. Dr. Gundersen emphasized the importance of one good strong central medical organization, such as the American Medical Association, closer unity in the medical profession, free choice of doctor, and guarding against socialized medical practices.

An award was presented to Dr. Lenox D. Baker, Director of the Department of Orthopedic Surgery, Duke University, and Medical Director of the North Carolina Cerebral Palsy Hospital, Durham, N. C., who was selected by the President's Committee on Employment of the Physically Handicapped as a physician who had made an outstanding contribution to the welfare and employment of the Nation's physically handicapped men and women. (OccMedDispDiv, BuMed)

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University of Pennsylvania Graduate School
of Medicine Changes Curricula

Doctor George B. Koelle, Dean of the Graduate School of Medicine of the University of Pennsylvania visited the Bureau recently and announced a revision of the curricula of the School. Henceforth, the eight (8) months' courses will be divided into two (2) semesters. The first will be devoted primarily to the basic sciences and the second to clinical application and practice. Either semester may be taken alone or both in sequence.

Applications will be accepted by the School this year up to 1 August 1958. Doctor Koelle was especially interested in obtaining applications from Reserve officers who are completing their active duty this summer.

(ProfDiv, BuMed)

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Training Programs in Atomic Medicine

In view of the increasing importance of atomic medicine in all phases of naval operations, a need exists for Medical officers trained in this field. Future assignments offer a wide range of possibilities. The Medical officer may serve in nuclear powered vessels, surface craft, or submarines, in research or teaching billets, in hospitals, in the field of special weapons

effects and at various staff levels. Widely varied training opportunities are available. Some of these lead to advanced academic degrees and some are accepted for credit by certain specialty boards. Some billets in this field are associated with extra pay. In broad terms, the field may be divided into three areas: nuclear propulsion, special weapons effects, and radioisotopes. There is high transfer value of the basic training in this field to permit work in any of the subdivisions. Applicants are urged to make their interest known right away, since one course commences early in July and another in September 1958. (ProfDiv, BuMed)

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Course in Blood Procurement, Storage, and
Utilization for NC Officers

Attention is directed to a course of instruction in Blood Procurement, Storage, Utilization and Other Restorative Fluid Therapy for Navy Nurse Corps Officers. The curriculum will include instruction in the principles of operating a Donor Center, procedures for blood typing and all cross-matching methods, titration, and collection, and storage of blood.

Duration: Four (4) months
Place: U. S. Naval Medical School
National Naval Medical Center
Bethesda, Md.

Convening dates: 14 April 1958 - Course ends: 1 August 1958
1 Sept 1958 - Course ends: 19 December 1958

Qualifications: 1. A minimum of three years active duty in Regular or Reserve Nurse Corps. In case of Reserves, extension of active duty must be of sufficient duration to cover an eighteen (18) months period of obligation from completion of the course.
2. An individual who has a sound professional background related to this training, personal and professional maturity and stability, and who can demonstrate teaching ability, skill in working with people, and is attentive to details.
3. Acceptable High School and School of Nursing grades with a good background in the sciences.

Obligated Service: Eighteen (18) months after completion of the course.

Official letters of request should be directed to the Chief, Bureau of Medicine and Surgery, Attention: Code 32. (NursDiv, BuMed)

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Obstetrical and Gynecological Seminar

The Commanding Officer of the National Naval Medical Center announces the Fifth Annual Armed Forces Obstetrics and Gynecology Seminar to be held at the National Naval Medical Center, Bethesda, Md., on May 5-9, 1958.

The panel type seminar will be attended by medical officers of the Army, Navy, and Air Force stationed throughout the United States, at sea, and at foreign stations. In addition, it is anticipated that a number of Reserve Medical officers of the Armed Services on inactive duty will attend.

Many nationally known consultants as well as outstanding Medical officers will discuss clinical problems peculiar to the specialty. (NNMC)

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Space Medicine Branch of the Aero Medical Association

Recent events have brought the subject of space medicine to the forceful attention of the world. Few people are aware of the fact, however, that there has been a group of aviation medical personnel who have been interested in this subject and actively doing something about it for a number of years. All persons who are members of the Aero Medical Association and who are interested in joining the Space Medicine Branch are eligible to do so. Of the 139 Naval members of the Aero Medical Association, only 34 are at present members of the Space Medicine Branch. It is believed that others might be interested in joining this group.

Applications for membership may be sent to Captain P. B. Phillips MC USN, U. S. Naval School of Aviation Medicine, Naval Air Station, Pensacola, Fla., or to Captain C. P. Phoebus MC USN, Office of Naval Research (Code 408), Department of the Navy, Washington 25, D. C.
(AvMedDiv, BuMed)

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Recent Research Reports

Naval Medical Research Institute, NNMC, Bethesda, Md.

1. Effect of Variation of the Casein and Sucrose Levels in the Diets of Rats on Caries Activity and the Composition of Mineralized Tissue. NM 75 01 00.01.02, 30 September 1957.
2. Adenosinetriphosphate-Adenosinemonophosphate Transphosphorylase III. Kinetic Studies. NM 01 01 00.02.01, 4 October 1957.

3. Direct Nonsuture Coronary Artery Anastomosis in the Dog. NM 71 03 00.01.01, 4 October 1957.
4. The Biological Basis of Rodent Control. Lecture and Review Series. No. 57-3, 4 November 1957.
5. Action of Some Diamine Optical Antiposed on Acetylcholinesterase Inhibition and Conduction in Desheathed Bullfrog Sciatic Nerve. NM 02 02 00.01.04, 6 November 1957.
6. Action of Certain Anticholinesterase Inhibitors on the Spike Potential of the Desheathed Sciatic Nerve of the Bullfrog. NM 02 02 00.01.05, 7 November 1957.

Naval School of Aviation Medicine, Pensacola, Fla.

1. Interdependence of Successive Judgments. I. Comparative Judgment, II. Affective Judgment, III. Absolute Judgment. NM 14 02 11, Subtask 12. Report No. 2, 31 July 1957.
2. Delayed Response: Effects upon Speech Reception and Speaker Intelligibility. NM 18 02 99, Subtask 1. Report No. 74, 15 August 1957.
3. A Note on the Refinement of the Pre-Flight Navigation Grade when Used as a Predictor of Flight Failure. NM 14 02 11, Subtask 1, Report No. 24, 2 September 1957.

(To be continued in the next issue)

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IN MEMORIAM

RADM Perceval S. Rossiter MC USN (Ret)	22 December 1957
CAPT Melvin D. Abbott MC USN (Ret)	17 February 1958
CAPT Forrest M. Harrison MC USN (Ret)	21 December 1957
CAPT Edward L. McDermott MC USN (Ret)	12 January 1958
CAPT George W. Shepard MC USN (Ret)	3 February 1958
CAPT Leo C. Thyson MC USN (Ret)	9 January 1958
CDR Thomas F. Gowen MC USN (Ret)	19 October 1957
CDR Albert B. Larson DC USN (Ret)	27 November 1957
CDR James P. Smith MC USN (Ret)	24 January 1958
LCDR Arthur H. Pierson MC USN (Ret)	9 November 1957
LCDR Frederic N. Pugsley MC USN (Ret)	6 November 1957
LT DeWitt C. Allen MSC USN (Ret)	14 January 1958
LT Douglas W. MacDonald HC USN (Ret)	13 January 1958
CHMEDSERWRNT Clarence E. Godfrey USN (Ret)	15 January 1958
CHMEDSERWRNT Earl J. Kane USN (Ret)	4 September 1957
CHMEDSERWRNT Louis N. Novak Jr. USN	17 February 1958

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From the Note Book

1. Rear Admiral B. W. Hogan, Chief of the Bureau of Medicine and Surgery, has commended LCDR J. H. Ebersole MC USN, Medical Officer aboard the USS Seawolf. LCDR Ebersole made a trip to the United Kingdom, December 2-17, 1957, and was most successful in furthering the liaison between the Royal Navy and the U. S. Navy in the field of submarine medicine according to Admiral Hogan in his commendation letter. (TIO, BuMed)
2. CDR M. A. Mazzearella DC USN, on duty at the U. S. Naval Administrative Command, U. S. Naval Training Center, Great Lakes, Ill., recently presented an essay on "Naval Research in Cairo, Egypt" before the Chicago Section of the International Association for Dental Research at Northwestern University, Chicago, Ill. (TIO, BuMed)
3. The National Bureau of Standards and the National Academy of Sciences-National Research Council have announced an expanded plan for coordination of the Bureau's technical advisory committee program by the Academy-Research Council in cooperation with a number of the major professional scientific societies of the United States. The new plan for coordination of these advisory activities by the Academy-Research Council will strengthen the current program by allowing more complete coverage of the Bureau's diversified research activities, and by providing for the coordination of recommendations from the various professional interests which the Bureau serves. (NBS)
4. The number of deaths from all causes increased slightly in the 114 large cities during the week ended February 1, 1958, as compared with the previous week. The numbers were 12,858 and 12,753 respectively. Deaths from influenza and pneumonia increased from 675 to 750. The increases in influenza and pneumonia deaths occurred in the cities of the Middle Atlantic, West North Central, South Atlantic, and West South Central Divisions. The cumulative total since September 1, 1957 is 12,475 as compared with 7,317 for the same period 1 year ago, 7,110 in 1955-56, and 6,533 in 1954-55. (PHS, HEW)
5. The Pacific War Memorial Committee of Hawaii is planning to construct a permanent memorial to USS Arizona at Pearl Harbor. Surviving members of the crew and others interested are invited to write the Chairman, USS Arizona Memorial, Pearl Harbor, T.H. (Navy Reservist)
6. The comparative value of 6 different nitrites in the treatment of angina pectoris when administered by the oral, sublingual, subcutaneous, and percutaneous routes was studied in 34 patients by measuring the amount of work that could be performed under standardized conditions without

producing angina and also by observing the clinical response and the exercise electrocardiogram. (Circulation, January 1958; J. E. F. Riseman, M.D., G. E. Altman, M.D., S. Koretsky, M.D.)

7. Translumbar aortography is of value as a diagnostic procedure, but only as an adjunct to simpler, safer, and more revealing studies. The hazards of the procedure must be carefully weighed against the probable information to be received. Six cases of untoward reactions to translumbar aortography are presented, including paraplegia, perirenal abscess, retroperitoneal hemorrhage, chemical pyelonephritis, and extravasation of dye with severe pain. (Arch. Surg., January 1958; J. E. Anthony, Jr., M.D.)

8. The author's experience indicates that, in the vast majority of instances, it is possible to carry women with heart disease safely and productively through pregnancy. Success depends on the understanding and careful application of the principle of the total cardiac burden and on making a wide appraisal of the factors in pregnancy and in other aspects of the patient's life which influence this burden. (Arch. Int. Med., January 1958; C. S. Burwell, M.D.)

9. A technique for bronchography employing cyclaine topical and local anesthesia, tracheal puncture, and dionosil opaque medium is presented. This or similar procedure is recommended for more widespread usage because of minimal equipment requirement, simplicity, and freedom from reaction to an anesthetic agent. (Am. J. Roentgenol., January 1958; R. E. Beck, M.D., A. A. Hobbs, Jr., M.D.)

10. Comparison of 100 normal adult male and 100 normal adult female skulls has been made from a roentgenologic standpoint. They were compared as to sagittal diameter, mastoid length, mandibular width at the level of the mastoid tips, and mandibular angle width. The comparison of the findings shows that there are characteristic dimensions for the male and female and that sex can be predicted in 88%. (Radiology, January 1958; J. L. Ceballos, M.D., E. H. Rentschler, M.D.)

11. In the treatment of cancer of the tongue, the primary tumor can be controlled essentially with equal effectiveness by surgery or by irradiation. For lesions at the base of the tongue, irradiation is probably superior. Radical neck dissection is the treatment of choice for metastatic disease. (Surgery, February 1958; H. W. Southwick, M.D., et al.)

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The printing of this publication was approved by the Director of the Bureau of the Budget, 16 May 1955.

DENTAL**SECTION**Manual of Medical Department Chapter Six

Chapter 6, The Navy Dental Service, Manual of the Medical Department, is now being distributed as part of page change 6 of the Manual and will be effective upon receipt.

The new chapter consolidates, insofar as practicable, all matters pertaining to or of interest to Dental officers, Medical Service Corps officers in dental activities, Dental Service Warrant officers, and Dental Technicians. Where undesirable duplication might occur, reference is made in Chapter 6 to other parts of the Manual or to other pertinent directives. Some major changes incorporated in the new chapter are:

1. Redesignation of the title from "The Dental Corps" to "The Navy Dental Service" to conform with the general contents of the chapter.
2. Inclusion of a new section outlining the primary functions and general responsibilities of the Navy Dental Service.
3. Inclusion of a new section outlining the responsibilities of the Dental Division, Bureau of Medicine and Surgery, as it relates to the Navy Dental Service.
4. Inclusion of a new section on dental standards which brings together into one section all dental standards. Dental standards are still included in Chapter 15 under the various types of physical examinations.
5. Inclusion of a new section on planning of dental facilities.
6. Inclusion of a new article which specifically prohibits the conduct of a private practice by Navy Dental officers on active duty.

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Change of Entries on Standard Form 603

BuMed Notice 6620, Dental Record, Standard Form 603 modifies the procedure for making entries in item 16 of the Dental Record, Standard Form 603.

Article 6-75, Manual of the Medical Department, requires that the markings on all charts of the Dental Record, SF 603, shall be made in blue or blue-black ink. Diseases and abnormalities which are found by dental examinations subsequent to the original examination are marked

on the dental chart in Item 16 of the SF 603. Experience has shown that after several examinations and treatments, these markings lose value in indicating the status of an individual's requirements for treatment.

BuMed Notice 6620 modifies the procedure so that all future entries in Item 16 of the SF 603 shall be made in pencil. When the condition for which the entry was made has been treated or no longer exists, the entry shall be erased.

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Changes in Rating

BuPers Notice 1440 establishes the procedure for effecting changes in the DT rating to conform with modification of the Enlisted Rating Structure.

The Secretary of the Navy approved, on December 14, 1957, the disestablishment of the emergency service ratings, Dental Technician G (General), Dental Technician P (Prosthetic), and Dental Technician R (Repair).

This notice authorizes and directs commanding officers to change rating, in equal pay grade, of the Naval Reserve and Fleet Reserve personnel on active duty from the above emergency Service ratings to Dental Technician, (DT). These changes are to be effected between March 1, 1958 and July 1, 1958.

Changes in rating involving members of the Naval Reserve and Fleet Reserve on inactive duty will be the subject of separate correspondence addressed to commands charged with administering their records.

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"Operation Build-Up"

"Operation Build-Up" on February 1, 1958, of the Dental Corps, Regular Navy, reached another peak with a total of 967 officers on active duty. This is an increase of 268 career Dental officers since August 1954. (See chart)

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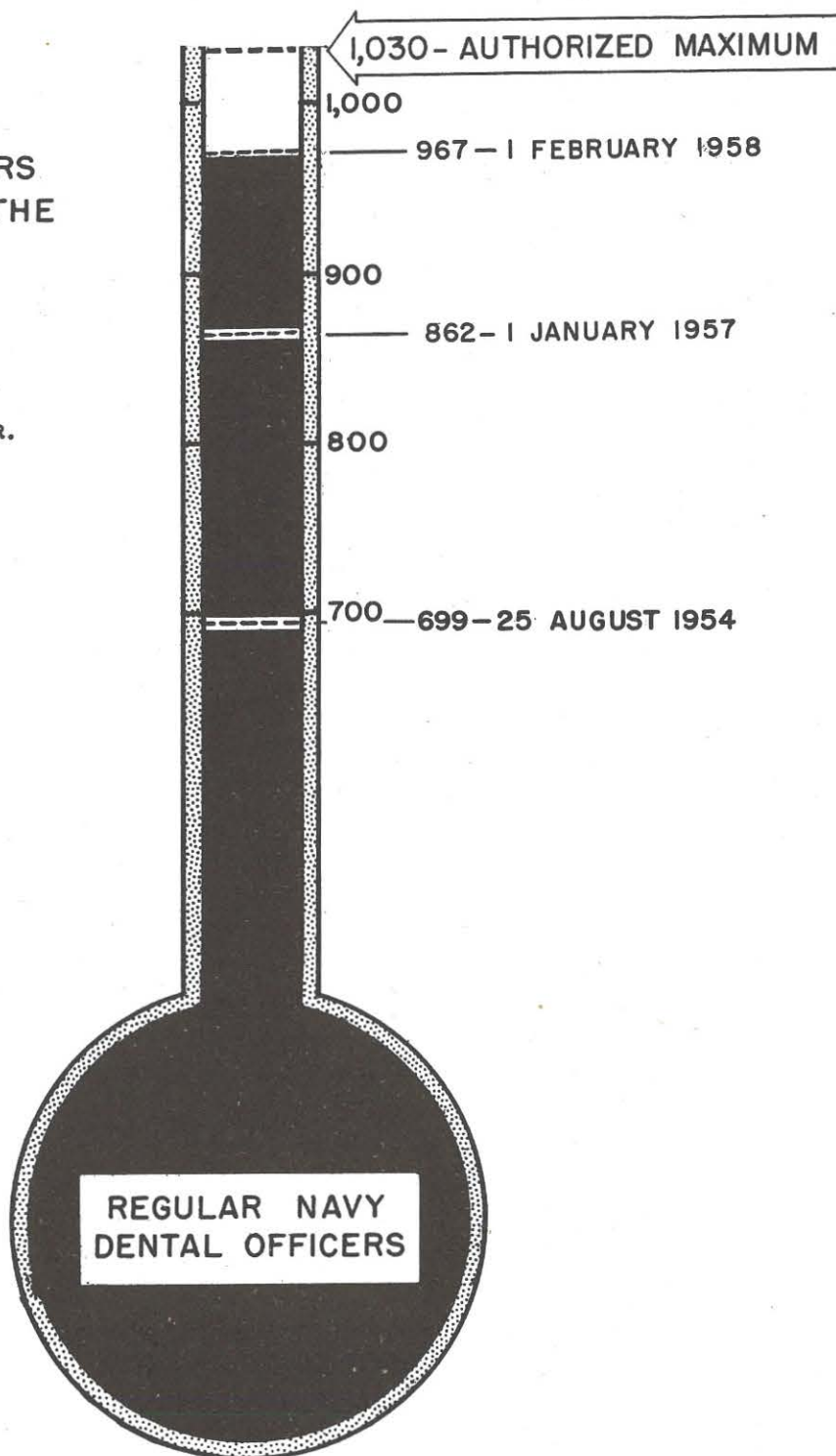
Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

DENTAL OFFICERS APPOINTED IN THE U.S. NAVY__

DURING THE PERIOD
1 NOVEMBER 1957 TO
1 FEBRUARY 1958

ARTHUR ARAKELIAN, JR.
GROVER G. BEELER
CHARLES N. CLARK
MALCOLM S. DAVIS
DONALD C. GONDER
WILLIAM F. HALE
THOMAS U. HOPKINS
ROBERT J. LEUPOLD
JOHN S. LINDSAY
CALVIN D. NESTER
BARRY E. PINES
WILLIAM H. PRANGE
JOHN N. REICHHELD
ROBERT M. SAINATO
JAMES A. VAN DYKE
FRANCIS A. WARD.





RESERVE SECTION

Participation in Reserve Medical Program in a Pay Status

Participation in the Reserve Medical Program in a pay status for any Medical Department Reservist is available through the following:

A. Attendance at weekly drills of units of the Surface, Submarine, Aviation, Construction Battalion, Electronics, Marine Corps Reserve, and Hospital Corps Programs of the Naval Reserve. These units schedule 48 drills per year in a pay status and members are required to perform annual 14-day active duty for training with pay. Medical officers attached to these units perform physical examinations and related tasks incidental to the medical support of the unit; Medical Service and Nurse Corps officers and Hospital Corpsmen assist the medical officers as necessary. Hospital Corps Divisions consist of Medical Department personnel only and provide specific training for Reserve Hospital Corpsmen. Medical, Medical Service, and Nurse Corps officers serve as instructors in these units.

B. Active duty for training at seminars, schools, special training courses and on-the-job duty at any suitable Naval activity, Naval hospital, or cruising Naval vessel. Developed jointly by the Bureau of Naval Personnel and the Bureau of Medicine and Surgery, this type of training requires the inactive Reservist to report aboard a naval activity or vessel for the purpose of acquainting him with what the active Navy is doing. It affords the individual an opportunity to be brought up to date on the latest procedures, tactics, equipment, and military leadership. Thus, this training is considered to be the most valuable part of the Reserve Training Program. Active duty for training is available to Medical Department personnel attached to, or associated in, a pay status of pay units of the Naval Reserve within funds appropriated for this purpose.

C. Appropriate duty with pay. This type of training is available to inactive Medical and Nurse Corps officers of the Naval Reserve. Medical officers perform physical examinations and provide such medical support as is required for the function of the Reserve Training Center. Nurse Corps officers perform related tasks incidental to the medical support of the Reserve Training Center. Commandants are authorized to issue appropriate duty with pay orders to qualified individuals within established quotas. Appropriate duty with pay may be performed no

oftener than once per calendar week within a maximum of 48 per year. IN ADDITION TO PROVIDING PAY, MEMBERS OF THE PAY PROGRAM OF THE NAVAL RESERVE EARN BOTH RETIREMENT AND PROMOTION POINT CREDITS.

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Training Course for Inactive Reservists

A fourteen-day active duty for training course in Disease Vector and Economic Pest Prevention and Control is available to inactive Reserve officer and enlisted Medical Department personnel beginning on the first Monday of March, April, and June, and the third Monday of February and May, 1958, at the Naval Disease Vector Control Center, NAS, Jacksonville, Fla.

Medical Department Reservists from the First, Third, Fourth, Fifth, Sixth, Eighth, and Ninth Naval Districts are eligible, within funds available for this training which features a series of comprehensive lectures, demonstrations, and field experiments related to vector and pest prevention and control procedures with special reference to naval preventive medicine aspects.

Security clearance is not required. Interested eligible Reservists should submit their request to the Commandant of their home Naval District at the earliest practicable date.

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Annual Meeting of Aero Medical Association

The twenty-ninth annual meeting of the Aero Medical Association will convene at the Statler Hotel, Washington, D. C., during 24 - 26 March 1958.

The scientific program for presentation includes sessions on protection at extreme altitude, accidents and flight safety, the physiology of high altitude flight, the physiology of stress, space medicine, environmental physiology, clinical problems, and aviation psychology—all of which has a direct military application and provides information essential to the performance of military medical duties.

Eligible inactive Reserve Medical Department officers have been authorized to receive one retirement point credit for each day's attendance, provided they register with the military representative present.

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PREVENTIVE MEDICINE SECTION

Antibiotic Residues in Food

Antibiotics in Food Preservation (Science, 126: 1159-1161, 6 December, 1957, by Henry Welch, an official of the U. S. Food and Drug Administration, contains the following public health and regulatory aspects of antibiotic residues in the food supply.

"During the . . . three years, (1954, 1955, and 1956) three surveys have been made of fluid market milk to determine its antibiotic content. In these surveys, a total of 2274 samples were examined and samples from all states were included. An average of 6.9% of the samples examined contained penicillin in concentrations varying from 0.003 to 0.550 units per milliliter. Other dairy products tested, including powdered milk, evaporated milk, ice cream, butter, cheese, shell eggs, and broken eggs, were found to be free from antibiotic residues.

The relatively large number of positive samples noted in the year that separated the first and second surveys caused some concern and it seemed advisable to obtain some opinion on the possible public health significance of the presence of penicillin in these quantities in market milk. Accordingly, some 30 experts in the fields of antibiotic therapy, allergy, and pediatrics were asked to express their views on this matter. The majority of these experts believed that penicillin in these amounts is unlikely to modify the oral or intestinal flora, cause the emergence of resistant strains, or provoke sensitization of an insensitive person. However, the majority felt that such concentrations might possibly cause a reaction in a highly sensitive individual. Recently, the Food and Drug Administration has taken three steps to alleviate the public health problem involved:

1. Through cooperation with the U. S. Department of Agriculture, an intensive program has been initiated to educate the farmer concerning the importance of discarding, or using for purposes other than human consumption, milk from cows treated for mastitis with antibiotic drugs for a period of three days following the last treatment. In addition, the National Milk Producers Federation which reaches some 500,000 farmers is assisting in this education program through their state agents.

2. On 23 January 1957, a notice was published in the Federal Register concerning a proposal of the warning statement regarding disposition of milk from treated cows which is required in the labeling of antibiotic drugs intended for intramammary infusion. It was proposed that this warning be placed on the immediate container of the drug rather than in the literature accompanying it. This is now in effect.

3. On 9 February 1957, a 'Notice of Proposed Rule Making' was published in the Federal Register, limiting the penicillin content of mastitis preparations to 100,000 units per dose. This became effective on 12 August, 1957.

It is hoped that these three steps will alleviate the problem of antibiotics, particularly penicillin, being present in our milk supply. However, if these procedures are unsuccessful, it may be necessary to ban the use of penicillin in mastitis preparations in the United States.

The control of antibiotics in our food supply becomes more complex daily. We now have before us for consideration the use of chlortetracycline and oxytetracycline in fish as a means of extending 'shelf life.' Unfortunately, in contrast to demonstrations with poultry, we have been unable to demonstrate that ordinary methods of cooking treated fish (broiling, frying, boiling, or baking) eliminate the residual antibiotic. Furthermore, some fish are eaten raw, smoked, or pickled, and in all these cases the consumer would ingest antibiotic residues. Before tolerance levels can be established for these antibiotics in fish, it will be necessary for those requesting them to demonstrate that the residues found are not dangerous to public health. "

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NAVY DEPARTMENT

DEPARTMENT OF THE NAVY
U. S. NAVAL MEDICAL SCHOOL
NATIONAL NAVAL MEDICAL CENTER
BETHESDA 14, MARYLAND

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